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ABSTRACT

This study investigated the type of language impairments found and the degree to which these impairments were being identified in a learning-disabled population in a middle school suburban setting, by use of the Fullerton Language Test for Adolescents, Revised. Subjects were categorized as language learning impaired (N=8 and mean age of 13 years) or non-language learning disabled (N=22 and mean age 13 years). No significant differences were found between the language learning-disabled and non-language learning-disabled groups in their performance on the diagnostic oral language test, suggesting that many learning-disabled students have unidentified language-based problems and are not receiving needed services from a speech-language pathologist. The data also suggest the need for language to become a primary curricular concern for teachers of the learning disabled. (Includes 25 references.) (DB)

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DIFFERENTIATING LANGUAGE LEARNING DISABLED POPULATIONS FROM NON-LANGUAGE LEARNING DISABLED POPULATIONS

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ABSTRACT

The purpose of this study was to determine the degree to which language problems were being diagnosed in middle school learning disabled populations. Specifically, oral language problems were operationally defined as scores on subscales of the Fullerton Language Test for Adolescents which are significantly below the Fullerton norm group scores. The learning disabled students were operationally defined as students who had been classified as having learning disabilities by members of a multidisciplinary team whose members were certified by the state. The language impaired students were operationally defined as students who had been classified as language impaired by a state and ASHLA certified speech-language pathologist. The degree to which oral language problems in the learning disabled students are being diagnosed was assessed by comparing the performance on the Fullerton: (a) nonlanguage impaired learning disabled students with the Fullerton norm group; (b) language impaired learning disabled students with the Fullerton group norm, and (c) non-language impaired learning disabled students with language impaired learning disabled students. Data for each assessment were gathered by administering the Fullerton Test for Adolescents to both nonlanguage impaired and language impaired learning disabled groups.

The results of this study supported the primary expectation of this research; namely, that many learning disabled students have language problems which are not being identified.

DIFFERENTIATING LANGUAGE LEARNING DISABLED POPULATIONS FROM NON-LANGUAGE LEARNING DISABLED POPULATIONS

INTRODUCTION

As early as 1969, McWilliams described communication skills as the basis for all educational experiences and as the measure used to assess the success or failure of the student in that setting. Learning disabilities has always been associated with students who have disorders in written and oral language which effect their success in the academic setting and was early on included in the definition of learning disabilities (Federal Register, 1977). The National Joint Committee on Learning Disabilities (1991) proposed definition continues to include "... significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities."

The notion that students with learning disabilities are not all alike has been addressed since the advent of the term. During the 1970s, the differences in the learning disabled were noted by several writers. Denckla (1979), Erenberg, Mattis, and French (1976), and Mattis, French, and Rapin (1975) identified at least three clusters of characteristics of the learning disabled. These clusters, described as either existing in isolation or in conjunction with one-another, were the language-learning disability syndrome; the articulatory and graphmotor dyscoordination syndrome, and the visual-spatial perceptual deficit syndrome. The

most common was the language learning cluster expressed by problems in comprehension, expression and use, word finding difficulties, and auditory processing difficulties. In 1979, Sitko and Gillespie concluded from their review of the literature that measures of speech and language competencies of the learning disabled were lacking, there were few investigations of the speech and language competencies of the learning disabled adolescents, and the nature of the linguistic problems of learning disabled adolescents were lacking.

McKinney (1984) reviewed and evaluated research conducted over the previous 15 year period to differentiate the "subtypes" of specific learning disabilities. He also examined 59 first and second grade LD children and using cluster analysis, identified four sub-types of LD within the group. Three of the four subtypes evidenced low competence in verbal ability in addition to being low in other areas of academic competence.

According to Larson and McKinley (1987), perhaps as many as five percent of the middle and secondary school population exhibit problems in oral communication resulting in a negative effect on academic performance. Frequently these problems exist concomitantly with learning disabilities and mental retardation. The National Association of Secondary School Principals (Larson & McKinley, 1989) emphasized the need for students receiving assistance in comprehension and/or production deficits, social communication problems,

and thinking skills, as well as hearing and speech problems.

While there is still an insufficient amount of well documented literature on adolescent language development, there is enough to conclude a significant population of learning disabled students with language impairments exits. One can also conclude many students are being placed in a learning disabilities setting without adequate identification of language problems and support services in language at a time when language is emerging as a primary curricular concern for the teachers.

Purpose of Study

While the literature dealing with middle and secondary school is not replete with the type of language impairments found in students in these grades, it does recognize the existence of a group of language-learning disabled students at these levels. There is some question as to whether current assessment practices are sufficient to diagnose language problems of the learning disabled in middle and secondary school. The second edition of the Fullerton Language Test for Adolescents was published in 1986 in order to meet the increasing need for a valid language assessment instrument that could distinguish normal from language impaired adolescents.

The purpose of this study was to investigate the type of language impairments found and the degree to which these impairments were being identified in a learning disabled population in a middle

school setting in a suburb of St. Louis, Missouri by use of the Fullerton Language Test for Adolescents-Revised.

Background Literature

It is becoming more commonly recognized that language deficits play a central role in learning disabilities, especially in reading comprehension and general lowered academic success. These deficits or delays seen in the young child are considered indicators for later difficulty in school (Seidenberg, 1989). Leonard (1990, p. 161) stated the most notable feature in preschool at-risk children "...is that the large majority of these linguistic features...are slow to emerge and develop."

Seidenberg (1989) stated the language deficits of the school-age child and the linguistic demands of instructional language may contribute to the hyperactive, impulsive behaviors, and attentional deficits often seen in these students. Types of language problems generally seen in the elementary school student include difficulty comprehending language involving "Wh" questions, understanding and using pronouns, negative constructions, negations, constructions, and adjective transformations (Vogel, 1975; Wiig & Semel, 1975). Wiig and Semel (1976) have shown that linguistic concepts of comparative, spatial, and temporal relationships are problems for learning disabled children. More recently, Wiig and Semel (1984) have shown different form classes, such as nouns, verbs, adjectives,

and adverbs, can be problem areas for elementary school learning disabled students.

Part of the problem in understanding the academic difficulties of adolescents as they are related to language-learning disabilities rests with the fact that early investigations of the acquisition of language were concerned with the child up to eight years of age. Menyuk (1983) pointed out it is now understood advances in linguistic abilities up to approximately sixteen years of age may be as significant as that of the linquistic attainments of the young child. These abilities in the older student are referred to as metalinguistic abilities. Menyuk (1983) identified metalinguistic abilities as increases in lexicon, awareness of multiple meanings, increase knowledge of the uses of words and the combinations of words to express ideas and reaction, and increase awareness of the structural rules of syntax for paraphrasing ideas. According to Hakes (1980), some of these abilities manifest themselves during the middle childhood years, while others tend to emerge in the earlier years from eight to thirteen and include ambiguous sentences, figurative language, humor and sarcasm.

The middle and secondary academic settings begin to emphasize the use of language for thinking, learning, and problem solving. Teachers require expression of thought and knowledge accurately and concisely, retrieval of information from memory, organizing, restating, and paraphrasing information and interpretation and use

of verbal analogies and metaphoric expressions (Wiig, 1990). The language-learning disabled adolescent, not able to demonstrate these skills, continues to accrue more school failure. Students exhibiting problems related to language are increasingly being reported by the teachers of middle and secondary school aged learning disabled students.

Recently, there has been attention focused on pragmatic language and its relationship to the development of social skills in the learning disabled. This focus on functional language has its impetus from transition/career education to enhance the learning disabled persons ability to be more linguisitically appropriate in the work setting (Whang, Fawcett, & Mathews, 1981). For the past several years numerous reports have verified that many students with learning disabilities display lack of social and linguistically appropriate behaviors (Bryan, 1974; Bryan & Bryan, 1978, & Pearl, Donahue, & Bryan, 1983). While use of functional language is critical to the learning disabled in the school setting, and while functional language includes lexicon and structure, it is not the primary language skill with which teachers are most concerned when addressing success in academic knowledge.

According to McKinley and Larson (1989) middle and secondary school students exhibit disorders ranging from comprehension and/or production deficits to social communication problems, low-level thinking skills, and hearing and speech problems. They pointed

out secondary schools emphasize written communication to the exclusion of oral communication skills and, as a result, this lack of emphasis on oral communication skills negatively affects the students learning of written communication skills. This practice is especially detrimental to the at-risk population of academically marginal and learning disabled students. As teachers become more informed as to the relationship between language impairments and the failure of the learning disabled student to learn, the expectation for appropriate assessement and programming increases.

The Fullerton Language Test for Adolescents-Revised was developed to distinguish normal from language impaired adolescents. This instrument has been revised and appears to be used widely with adolescent populations. Therefore, this study should help determine whether language problems in a middle school learning disabled population were being under identified.

OPERATIONAL DEFINITIONS

The terminology used in this study was defined as follows:

1. Oral Language Problems - Oral language problems were operationally defined as scores on the subscales of the Fullerton Language Test for Adolescents which were significantly below the Fullerton norm group score.
2. Learning Disabled Students - Learning disabled students were operationally defined as students who had been

classified as having learning disabilities by members of a multidisciplinary assessment team whose members were certified by the state.

3. Language Impaired Students - Language impaired students were operationally defined as students who had been classified formally as language impaired by a state and ASHA certified speech-language pathologist.

RESEARCH DESIGN

The following research hypotheses were employed to assert the operational expectations of the outcome of this research:

1. Nonlanguage impaired learning disabled students would score significantly lower on most of the subscales of the Fullerton than the Fullerton normative group.
2. Language impaired learning disabled students would score significantly lower on most of the subscales of the Fullerton than the Fullerton normative group.
3. There is no significant difference in the scores on most of the subscales of the Fullerton between non-language impaired learning disabled students and language impaired learning disabled students.

METHOD

Subjects: Two groups of subjects (n = 30) were used in this

study. Both groups were recruited from a resource learning disabilities program in a middle school setting in a middle-class suburb of St. Louis, Missouri. The subjects were categorized as language learning impaired and non-language learning disabled as defined by standards set forth by the state. The language learning disabled group was composed of two females and six males with a mean age of 13 years and 9 months. One female and twenty-one males with mean age of 13 years 0 months made up the non-language learning group.

All of the language learning disabled students were receiving one or more hours weekly of language therapy by a speech/language pathologist, in addition to a minimum of two hours daily in the learning disabilities resource program for assistance in math, reading, and/or written expression. The non-language learning disabled all received one or more hours daily of learning disabilities service in the area of their specific disability.

Procedure: After receiving parental consent, the students were tested using the Fullerton Language Test for Adolescents. It was selected based on its ability to distinguish normal from language impaired adolescents.

Each student was tested individually in a quiet setting by their resource room learning disabilities teacher. The testing took approximately one hour per student and was given to each student in one sitting. The eight subtests were administered according to the Fullerton procedures. The examiner explained each subtest care-

fully and a trial item from the text was given to assure each student fully understood what was required of him or her.

INSTRUMENTATION

The instrumentation used as the measure of oral language was the Fullerton Language Test for Adolescents. The experimental edition was developed by Thorum in 1977 to determine the difference between normal and language impaired populations. The revised edition of the Fullerton "...incorporates the suggestions of many of its users ..." over a five year period making it both comprehensive and useful (Thorum, 1986). The Fullerton consists of eight subtests which measure various aspects of receptive language processing skills: auditory synthesis; morphology competency; oral commands; convergent production; divergent production; syllabication; grammatic competency, and idioms. Figure 1 depicts the subtests.

The Fullerton appears to be a content-valid test for adolescent language performance. The subtests were selected on the basis of a review of research indicating that the eight skills assessed were strong indicators of adolescent language competence. Test-retest coefficients range from .84 to .96 for a sample of 75 children which suggests the Fullerton is a stable measure of language performance. Split-half reliability coefficients range from .70 to .85 which indicates that the various items within each subtest are measuring the same kind of skill or process. Several studies

Figure 1:
The Fullerton Language Test for Adolescents subtests

AUDITORY SYNTHESIS – synthesize phonemic sounds or units of sounds presented separately in one word or utterance (actual or nonsense) (p. 4).

MORPHOLOGY COMPETENCY – analyze the morphological elements of words and to demonstrate competence in correct usage (p. 5).

ORAL COMMANDS – perform a number of tasks that vary in length and syntactical complexity (p. 6).

CONVERGENT PRODUCTION – identify, retrieve and formulate responses to different words that have specific meanings (p. 9) .

DIVERGENT PRODUCTION – categorize, retrieve and formulate responses that satisfy the semantic expansion imposed by context (p. 11).

SYLLABICATION – identify syllables and to detect the number of syllables in words (p.12).

GRAMMATIC COMPETENCY – identify whether a sentence presented orally is grammatically correct or incorrect and to present a correct form where appropriate (p. 13).

IDIOMS – identify the underlying meaning of utterances that may have several meanings (p. 15).

Source: Thorum, A.R. (1986). The Fullerton Language Test For Adolescents, Palo Alto, CA: Consulting Psychologists Press, Inc.

have been reported showing the Fullerton does distinguish between normal and language impaired adolescents (Globe & Pine, 1982; Shargel, 1982).

RESULTS

The purpose of this investigation was to determine the degree to which oral language problems were being diagnosed in one adolescent learning disabled population.

Specifically, oral language problems were defined as scores on subscales of the Fullerton Language Test for Adolescents which were significantly below the Fullerton norm group. The learning disabled were defined as students who had been formally classified by state certified examiners as having learning disabilities and the language learning disabled were defined as students who had been classified as language impaired by a state and ASHA certified speech-language pathologist.

The degree to which there was a failure to diagnose oral language problems was determined by comparing the performance on the Fullerton of a group of: (a) nonlanguage impaired learning disabled students with the Fullerton norm group, (b) language impaired learning disabled students with the Fullerton norm group, and (c) nonlanguage impaired learning disabled with language impaired learning disabled students.

Hypothesis 1. Nonlanguage impaired learning disabled students score significantly lower on most of the subscales of the Fullerton Language Test for Adolescents than the Fullerton norm group.

The results for this hypothesis are reported in Table 1. Table 1 contains the means of the nonlanguage impaired learning disabled students and the Fullerton normed means for each scale of the Fullerton Language Test for Adolescents, as well as the results of a one-tailed t-test comparing the means of the two groups. Nonlanguage impaired learning disabled students scored significantly lower than the Fullerton normed group on the subscales of Auditory Synthesis, $t\ (22) = 3.63$, $p < .05$; Oral Commands, $t\ (22) = 2.98$, $p < .05$; Convergent Production, $t\ (22) = 9.61$, $p < .05$; Divergent Production, $t\ (22) = 12.45$, $p < .05$; Syllabication, $t\ (22) = 3.09$, $p < .05$; Grammatic Competency, $t\ (22) - 2.01$, $p < .05$; Idiom, $t\ (22) = 7.45$ $p < .05$. However, nonlanguage impaired learning disabled students did not score significantly lower for the subscale of Morphology Competency at the same level of confidence. These data justified the acceptance of Hypothesis 1.

Hypothesis 2. Language impaired learning disabled students score significantly lower on most of the subscales of the Fullerton Language Test for Adolescents than the Fullerton norm group.

Table 1

A one-tailed sample t-test comparing Learning Disabled Subject's Means with the Norms from the Fullerton

Sub Test	Learning Disabled Group's Mean	Fullerton Norms	t	p value
1. Audi Synthesis	12.87	15	3.63	.00075*
2. Morphology Comp	16.61	17	.99	.1671 ns
3. Oral Commands	14.27	16	2.98	.00345*
4. Conv. Prod	29.65	40	9.61	.00005*
5. Diver. Prod	39.30	62	12.45	.00005*
6. Syllabication	14.09	16	3.09	.00265*
7. Grammatic Comp	16.30	17	2.01	.02865*
8. Idiom	4.35	9	7.45	.00005*

*p<.05

The results for this hypothesis are reported in Table 2. Table 2 contains the means of the language impaired learning disabled students and the Fullerton normed means for each scale of the Fullerton, as well as the results of a one tailed t-test comparing the means of the two groups. Language impaired learning disabled students scored significantly lower than the Fullerton normed group on the subscales of Auditory Synthesis, $t(6) = 3.62$, $p < .05$; Convergent Production, $t(6) = 6.87$, $p < .05$; Divergent Production, $t(6) = 9.72$, $p < .05$; Syllabication, $t(6) = 3.28$, $p < .05$; Grammatic Competency, $t(6) = 1.19$, $p < .05$; Idiom, $t(6) = 8.86$, $p < .05$. However, language impaired learning disabled students did not score significantly lower for the subscales of Morphology Competency and Oral Commands at the same level of confidence. These data justified the acceptance of Hypothesis 2.

> Hypothesis 3. There is no significant difference in the scores on most of the subscales of the Fullerton Language Test for Adolescents between the nonlanguage impaired learning disabled and language impaired learning disabled students.

The results for this hypothesis are reported in Table 3. Table 3 contains the means and standard deviations of nonlanguage impaired learning disabled and language impaired learning disabled groups for each scale of the Fullerton Language Test for Adolescents as well as the result of a two tailed t-test for independent samples. There

Table 2

A one-tailed sample t-test comparing Language Learning Disabled Subject's Means with the Norms from the Fullerton

Sub Test	Language Learning Disabled Group's Mean	Fullerton Norms	t	p value
1. Audi Synthesis	11.57	15	3.62	.00555*
2. Morphology Comp	16.28	17	.88	.2054 ns
3. Oral Commands	14.71	16	.89	.2036 ns
4. Conv. Prod	26.14	40	6.87	.00025*
5. Diver. Prod	34.86	62	9.72	.00005*
6. Syllabication	11.43	16	3.28	.00845*
7. Grammatic Comp	15.86	17	1.19	.03985*
8. Idiom	2.67	9	8.86	.00015*

*p<.05

were no significant differences between these two groups for any of the subscales. These data failed to justify the rejection of null Hypothesis 3.

DISCUSSION

Results of this study indicated that those middle school students diagnosed as learning disabled were exhibiting language problems similar to those students diagnosed as learning disabled and language impaired. These results support the premise that many learning disabled students have unidentified language based problems and are not receiving services from the speech-language pathologist.

The data from this study suggests that language must become a primary curricular concern for teachers of the learning disabled. The relationship between academic success and the understanding and use of oral language in the classroom setting needs to be evident in the continuum of services made available to these students. In addition to the academics, the increased social abilities that skill in oral language brings to the learning disabled cannot be overlooked.

A range of services could be provided to assist in meeting the needs of the language-learning disabled students. The traditional "pull-out" language therapy sessions could be maintained for the more serious language-learning impaired students. Another

technique which could be inititated is the class-within-a-class model where the special educator and the speech-language pathologist work in concert. The consultant model where the speech-language pathologist and the special educator coordinate activities to facilitiate the acquisition of oral language skills in conjunction with written langauage skills and all subject matter offers many possibilities. Students who are not significantly impaired in language could be provided related services to augment the classroom academics.

During the referral process, teachers need to be more aware of identifying behaviors indicative of language impairment. These observations would assist in planning procedures to assess use of language associated with appropriate social behaviors and procedures to assess form and content of language associated with academic success. In the case of the student being identified learning disabled and not language impaired during the elementary years, the three year re-evaluation is an excellent time to consider if a language impairment is now evident.

The body of knowledge in learning disabilities and language continues to expand. There is enough available information at the present time to warrant more effort on the part of teachers of the learning disabled and speech-language pathologists to expand programming for middle school language-learning disabled students. This study is another indication of the need to

continue to identify "clusters" or "sub-types" within the population of learning disabled school-aged students. To do so will assist planning appropriate interventions, utilize the expertise of various service providers, and maximize the concept of collaboration among the disciplines.

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